REMARKS

I. STATUS OF THE CLAIMS

Claims 1-7 and 20-35 are currently pending.

Claims 2-7 and 21 are withdrawn from consideration. However, it is respectfully submitted that these claims should be allowed if claim 1 is allowed, since claims 2-7 and 21 are dependent from claim 1.

II. REJECTION OF CLAIMS 1, 20 and 22-35 UNDER 35 USC 103 AS BEING UNPATENTABLE OVER SENMA ET AL., US PATENT NO. 4,856,008

The present invention as recited, for example, in claim 1, relates to a light output control circuit comprising (a) a photodetector which detects the light output of a light-emitting device, to thereby provide a light output detection value; (b) a comparator which compares the light output detection value with a reference value, to thereby provide a comparison result; and (c) a light output control device which performs discrete control actions to control the light output of the light-emitting device in accordance with the comparison result.

Further, the light output control circuit comprises **a switching circuit which counts the number of control actions performed by the light output control device, and which instructs the light output control device to perform control in accordance with a power-up mode until the number of control actions after starting control reaches a predetermined value, and to perform control in accordance with a steady-state mode after the number of control actions has reached said predetermined value.**

For example, in FIG. 4, coarse/fine switching circuit 26 and other components in FIG. 4 together count the number of control actions, and instruct to perform control in accordance with a power-up mode until the number of control actions after starting control reaches a predetermined value, and to perform control in accordance with a steady-state mode after the number of control actions has reached the predetermined value. FIG. 5 shows detailed control, and shows operation in power-up mode and steady state mode.

In the last sentence spanning pages 2-3 of the Office Action, the Examiner concedes that Semna does not specifically disclose a power-up mode until the number of control actions reaches a predetermined value, and a steady-state mode thereafter.

However, the Examiner asserts that counter 15 of Semna has a count value which increases gradually, and thereby increases intensity of light emitted from laser diode 10 until

the intensity reaches a predetermined value. The Examiner also asserts that counter 15 of Semna then returns to a disabled state, wherein the magnitude of the drive current supplied to the laser diode 10 is maintained at its current value. Therefore, the Examiner asserts that it would have been obvious for Semna to provide a power-up mode and a steady-state mode, in order to automatically control the light output power and to provide a stabilized output light.

The Applicants note that, generally, the count value of counter 15 of Semna is used to increase or decrease the intensity of light emitted by the laser diode 10 until the intensity reaches a predetermined value. After reaching the predetermined value, the intensity is maintained at the predetermined value See, for example, column 4, line 42, through column 5, line 6, of Semna.

In this sense, Semna is similar to the operation of the related art in FIG. 1, and discussed on page 1, line 36, through page 2, line 15, of the present application.

However, the related art in the present application experiences problems in that it takes time for the light output to reach the predetermined value. That is, the rise time is too long. See, for example, page 2, lines 33-35, of the present application. As the operation of Semna is similar to that described in the related art in the present application, it is respectfully submitted that Semna would incur such problems of the related art.

The present invention as recited, for example, in claim 1, solves such problems by providing a switching circuit which counts the number of control actions performed by the light output control device, and which instructs the light output control device to perform control in accordance with a power-up mode until the number of control actions after starting control reaches a predetermined value, and to perform control in accordance with a steady-state mode after the number of control actions has reached the predetermined value. See, for example, page 14, lines 9-15, of the present application.

As indicated above, Semna uses the count value to increase or decrease the intensity of light emitted by the laser diode 10. It is respectfully submitted that there is nothing in Semna that discloses or suggests that the *number* of count operation can be used to perform any useful function. More specifically, it is respectfully submitted that there is nothing in Semna that discloses or suggests that the number of count operations should be tied to the switching of operation modes from a power-up mode to a steady-state mode. Instead, Semna simply switches operation modes based on detected intensity of emitted light, similar to that in the description of the related art of the present application.

Further, it is respectfully submitted that if the number of count operations of the

counter 15 of Semna are used to switch modes from a power-up mode to a steady-state mode, the laser diode 10 of Semna would likely not achieve the desired intensity values. Instead, the desired intensity in Semna is achieved simply by running the counter until the detected instensity actually reaches the desired intensity, without regard to the number of count operations.

For the above reasons, it is respectfully submitted that the present invention as recited, for example, in claim 1, is not obvious in view of Semna.

Although the above comments are specifically directed to claim 1, it is respectfully submitted that the comments would be useful in understanding various differences of various other claims over Semna.

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Claims 20-21, 23, 27 and 33 recite course/fine control, in combination with control based on the number of control operations. (See also claims 34 and 35, which recite somewhat similar features). Such combination of course/fine control with control based on the number of control operations provides significant advantages. For example, with such embodiments, the total number of control operations required to reach a steady-state value can be significantly reduced. See, for example, page 14, line 9, through page 16, line 10, of the specification. See especially page 16, lines 1-10.

As indicated above, it is respectfully submitted that Semna does not disclose or suggest a switching circuit which counts the number of control actions performed by the light output control device, and which instructs the light output control device to perform control in accordance with a power-up mode until the number of control actions after starting control reaches a predetermined value, and to perform control in accordance with a steady-state mode after the number of control actions has reached the predetermined value.

Moreover, it is respectfully submitted that no portion of Semna discloses or suggests tying course/fine control to the number of control actions.

Therefore, it is respectfully submitted that the present invention as recited, for example, in claims 20-21, 23, 27 and 33, which recite course/fine control in combination with control based on the number of control operations, is not obvious in view of Semna.

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In view of the above, it is respectfully submitted that the rejection is overcome.

III. CONCLUSION

In view of the above, it is respectfully submitted that the application is in condition for allowance, and a Notice of Allowance is earnestly solicited.

If any further fees are required in connection with the filing of this response, please charge such fees to our Deposit Account No. 19-3935.

Respectfully submitted,

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